

REMARKS

This paper is responsive to the Office Action dated March 27, 2007. Applicant thanks Examiner Dwivedi for the analysis set forth in the Office Action. Claims 1-3, 6-15, 17-23, 25-37 and 39-43 are under consideration. Applicant requests reconsideration of the claims in view of the amendments and remarks presented herewith. Furthermore, applicant requests rejoinder and allowance of the non-elected claims in view of the allowability of the generic independent claims under consideration.

Claim Rejection Under 35 U.S.C. § 112

The Examiner found use of the term "thruster pig" to be indefinite. In the Office Action, the Examiner stated: "It is not clear what is a thruster pig, what is the structure of the thrusters pigs." In order to address the Examiner's concerns, applicant has amended the claims and provided the following comments.

In the disclosure of the present application, a discussion of a preferred embodiment of a thruster pig begins on page 22:

"The Thruster Pig is the device which is propelled through the pipeline system to increase the velocity of the fluid in the pipeline. It is the moveable (secondary) member of an electromagnetic motor."

There is then described the positioning of magnets on the thruster pig, which creates a magnetic field. "The magnetic field produced by the magnets in the thruster pig links with the moving magnetic field in the coils to propel the thruster pig in the pipeline."

FIGs. 11 and 12 show an embodiment with permanent magnets. FIG. 13 shows an embodiment with an induction magnet.

Beginning on page 25, the present application describes a number of alternative propulsion systems:

Alternative (1): A pig equipped with a fuel cell that drives an electric motor. A small portion of the fluid being transported in the pipeline is consumed in the fuel cell to produce energy to propel the pig.

Alternative (2): A pig equipped with an air motor that converts pressure in a carrier fluid into mechanical energy to rotate a shaft.

Alternative (3): A pig equipped with an electric motor. A voltage is impressed on the carrier pipe. Electrical energy is transmitted to the pig by brushes located on the pig, which make sliding contact with the carrier pipe.

Alternative (4): A pig equipped with an onboard magnet source. An alternating current is used to induce a travelling magnetic field within the pipeline.

Alternative (5): A pig comprised of a slug of electrically conductive fluid that interacts with a travelling magnetic field, as described above.

From a review of the above alternatives, it is clear that the pigs to be covered by the language of the claims are only those pigs that are equipped with some form of a propulsion system capable of delivering thrust. Independent claims 1, 25, and 43 have thus been amended as follows:

Claim 1 now includes the step of "providing pigs equipped with a thruster propulsion system to propel them along a pipeline." These pigs are thereafter referred to as "the thruster pigs."

Claim 25 recites an apparatus that now includes, in combination, "pigs equipped with a thruster propulsion system to propel them along a pipeline." All subsequent references to these pigs are as "the thrusters pigs."

Claim 43 also recites an apparatus that now includes, in combination, "pigs equipped with a thruster propulsion system in the form of magnets capable of generating a magnetic field"

and "an electromagnetic thrust system to provide guidance and suspension of the thruster pigs, the electromagnetic thrust system including coils on the pipeline which provide an alternating current to the pipeline to induce a traveling magnetic field which interacts with the magnetic field in the thruster pigs, driving the thruster pigs sequentially through the pipeline..."

This amendment is believed to address the concerns raised by the Examiner. The claim amendments are fully supported by the disclosure and do not involve the introduction of any new matter.

CONCLUSION

In view of the foregoing amendments and arguments, applicant respectfully submits that the present application is now in condition for allowance. Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

Respectfully submitted,

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